

C.C. file

16 January 1985

MEMORANDUM FOR: Members of the Office of Training and  
Education Curriculum Committee

FROM: [redacted]

STAT

Chief, Topical Issues Branch

SUBJECT: Curriculum Committee New Course Checklist

1. The Topical Issues Branch is proposing to conduct a statistical techniques course for Directorate of Intelligence (DI) analysts. The course would be taught three times a week for two hours over a seven week period. This course fits into a series of functionally oriented courses and seminars conducted by TIB.

2. This proposal is in response to a request from the Director of European Analysis (D/EURA) of the DI. The request is supported by Mr. Kerr, the Associate Deputy Director of Intelligence, the DD/I Career Development Officer, and the Office of the Inspector General.

3. The students will be DI employees who use or are expected to use statistical techniques in their analysis. Students will be tested and graded on their knowledge of the course material.

4. The course, which was designed by [redacted] presents applied statistical techniques by blending techniques with practical analytical problems found in the DI. Emphasis is placed on overcoming improper usage of statistical tools such as deflators, measures of central tendency and indices. A combination of lecture and practical exercises will be used.

STAT

5. The course schedule is presented in Attachment I. The outline has been reviewed by [redacted] Chief, Statistical Analysis Staff, [redacted] D/EURA, and members of the Intelligence Training Division.

STAT

STAT

6. The course will be taught by [redacted]. He intends to borrow and use statistics books from the Information Science Training Division. This should keep dollar costs to a minimum. DI will provide a classroom for the course at Headquarters. Opportunity costs will be minimal.

STAT

SUBJECT: Curriculum Committee New Course Checklist

7. Upon approval, we will distribute an "OTE Special Training Bulletin" to DI training officers. The DI management structure will help identify students for this course.

8. In addition to using results of student tests, we will solicit student evaluations of course segments to evaluate and improve the course during its running.



STAT

## STATISTICAL TECHNIQUES

### FOR

### DI ANALYSIS

#### COURSE OBJECTIVES


1. To provide DI analysts with the tools and presentation techniques of descriptive statistics (data summarization, graphs, tables, and charts) and inferential statistics (drawing inferences from measures of central tendency, dispersion, and probability distributions).
2. To alert the students to the most common misuses of statistical data and techniques encountered in draft DI publications and to provide tools to help avoid them.
3. To help DI analysts determine how and when to apply statistical techniques and how to interpret the results of properly applied techniques.
4. To develop a better understanding of the statistical methods used in decision theory; i.e., making judgments under conditions of uncertainty.
5. To familiarize DI analysts with basic statistical techniques useful for multidisciplinary analysis.

## STATISTICAL TECHNIQUES FOR DI ANALYSIS

Monday, 4 February

1400-1600

Introduction

 and  
CPAS Personnel

STAT

Student Introductions. Outline of Course Objectives.  
Overview of primary sources of economic data.

Tuesday, 5 February

1400-1600

Study Period

STAT

Wednesday, 6 February

1400-1600

Basic Arithmetic  
and Algebra

Review of arithmetic operations (rounding and significant digits) and basic algebra (functions, graphs, scientific notation, and transformations).

Thursday, 7 February Study Period

Friday, 8 February

1400-1600

Ratios and Percentages

Basic rules for calculation and proper presentation of ratios and percentages. Simple indices of growth. Arithmetic and geometric means.

Monday, 11 February

1400-1600

Data Collection and  
Presentation

CPAS

Assuring consistency in units of measure. Arranging data to convey meaning and allow analysis. Good tabular presentation.

Tuesday, 12 February

1400-1600

Study Period

STAT

Wednesday, 13 February

1400-1600

Weighted Indices

Computational procedures for constructing weighted indices (Paasche, Laspeyres). Examples of current usage.

## STATISTICAL TECHNIQUES FOR DI ANALYSIS

Thursday, 14 February

1400-1600 Study Period

STAT

Friday, 15 February

1400-1600 Time Series Analysis  
and Forecasting

Decomposition of time series (trend, cyclical, seasonal, and irregular components). Use of smoothing methods.

Monday, 18 February HOLIDAY

Tuesday, 19, February

1400-1600 Study Period

STAT

Wednesday, 20 February

1400-1600 Measures of Central  
Tendency

Derivation, meaning, and usage of mean, median, mode, and geometric means.

Thursday, 21 February

1400-1600 Study Period

STAT

Friday 22 February

1400-1600 Measures of Dispersion

Derivation, meaning and usage of measures of dispersion such as range, variance, standard deviation, and coefficient of variation. Chebychef's theorem.

Monday, 25 February

1400-1600 Aggregating Data

STAT

Constructing frequency distributions. Derivation of measures of central tendency and dispersion.

Tuesday, 26 February

1400-1600 Study Period

STAT

## STATISTICAL TECHNIQUES FOR DI ANALYSIS

Wednesday, 27 February

1400-1600

Graphing Frequency  
Distributions

STAT

Use of histograms, frequency polygons, and ogives.

Thursday, 28 February

1400-1600

Study Period

STAT

Friday, 1 March

1400-1600

Probability

Classical probability, relative frequency, and subjective probability. Exhaustive and mutually exclusive events. Dependent and independent agents. Permutations and Combinations

Monday, 4 March

1400-1600

Special Probability  
Distributions

STAT

The binomial, Poisson, and normal distributions. Relationship of measures of central tendency and dispersion of these distributions. Sample size determination. Small and large samples.

Tuesday, 5 March Study Period

STAT

Wednesday 6 March

1400-1600

Tests of Significance

Hypothesis testing. Point and interval estimation. Type I and II errors. Known and unknown standard deviations.

Thursday, 7 March

1400-1600

Study Period

STAT

Friday, 8 March

1400-1600

Decision Analysis

Subjective probability in intelligence. Bayesian probability. Utility Analysis and Expected values. Decision trees. Precursor Analysis.

## STATISTICAL TECHNIQUES FOR DI ANALYSIS

Monday, 11 March

1400-1600

Statistical Analysis  
for Measures of Dispersion

STAT

Chi-square, F-test, and analysis of variance. Goodness of Fit.

Tuesday, 12 March

1400-1600

Study Period

STAT

Wednesday, 13 March

1400-1600

Regression and  
Correlation Analysis

Linear and curvilinear relationships. Coefficient of Determination. Least squares.

Thursday, 14 March

1400-1600

Study Period

STAT

Friday, 15 March

1400-1600

Regression and  
Correlation Analysis continued

Limitations of regression and correlation analysis. Standard error of the estimate. Multiple regression and correlation analysis.

Monday, 18 March

1400-1600

Non-Parametric  
Statistics

Mann Whiney Test. Rank correlation.

Tuesday, 19 March

1400-1600

Study Period

STAT

Wednesday, 20 March

1400-1600

Statistical Techniques  
and Computers

The availability of computer programs to assist in statistical analysis.

## STATISTICAL TECHNIQUES FOR DI ANALYSIS

Thursday, 21 March

1400-1600

Study Period



STAT

Friday, 22 March

1400-1600

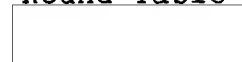
Statistical Techniques  
and Computers (continued)

Monday, 25 March

1400-1600

Analytical Perspectives

Round Table Discussion  
and CPAS)



STAT

Wednesday, 27 March

1400-1600

Final Exam



STAT



**Page Denied**